

Notice of Allowability**Application No.**

10/581,520

Applicant(s)

KENMOKU ET AL.

Examiner

MANDY C. LOUIE

Art Unit

1715

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 01/26/10.
2. ☒ The allowed claim(s) is/are 1-7.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413),
Paper No./Mail Date 20100910.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

/M. C. L./
Examiner, Art Unit 1715

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Colin Harris on 9/10/10.

The application has been amended as follows:

1. A coating method for coating a surface of an object, comprising: dividing said coating surface into a plural number of coating areas; sequentially shifting positions of a first set of turning paths for reciprocation of at least one sprayer unit in one of two directions of said reciprocation and coating a specific area of said divided coating areas, while forming a coating trajectory of said turning paths like a series of steps such that each successive one of the turning paths of the at least one sprayer unit along one edge of the specific coating area extends further in a first direction than each previous one of the turning paths along the one edge of the specific coating area; and

sequentially shifting positions of a second set of turning paths, which are adjacent to and face the first set of turning paths, for reciprocation of said at least one sprayer unit in said one direction to avoid overlapping with said first set of turning paths in said specific coating area and coating a different coating area which is adjacent to said specific coating area while forming a coating trajectory of said second set of turning

paths like a series of steps such that each successive one of the second set of turnings turning paths along one edge of the different coating area, adjacent to the one edge of the specific coating area ~~such that the first set of turning paths face the second set of turning paths~~, extends less in a second direction opposite to the first direction than each previous one of the second set of turning paths along the one edge of the different coating area to completely coat the object between the one edge of the specific coating area and the one edge of the different coating area by the coating the specific area and the coating the different coating area.

Allowable Subject Matter

The following is an examiner's statement of reasons for allowance:

The instant invention is distinguished over the prior art of record by a method for coating an object comprising dividing said coating surface into a plural number of coating areas; sequentially shifting positions of a first set of turning paths for reciprocation of at least one sprayer unit in one of two directions of said reciprocation and coating a specific area of said divided coating areas, while forming a coating trajectory of said turning paths like a series of steps such that each successive one of the turning paths of the at least one sprayer unit along one edge of the specific coating area extends further in a first direction than each previous one of the turning paths along the one edge of the specific coating area; and

sequentially shifting positions of a second set of turning paths, which are adjacent to and face the first set of turning paths, for reciprocation of said at least one

sprayer unit in said one direction to avoid overlapping with said first set of turning paths in said specific coating area and coating a different coating area which is adjacent to said specific coating area while forming a coating trajectory of said second set of turning paths like a series of steps such that each successive one of the second set of turnings turning paths along one edge of the different coating area, adjacent to the one edge of the specific coating area, extends less in a second direction opposite to the first direction than each previous one of the second set of turning paths along the one edge of the different coating area to completely coat the object between the one edge of the specific coating area and the one edge of the different coating area by the coating the specific area and the coating the different coating area.

Kaneme [JP 09-052067] teaches a method of coating a body of a car [abstract], wherein the method comprises dividing the coating surface into a plural number of coating areas, and at least two robotic reciprocating coating units provide at least a first and second coating trajectories each comprising a series of turning paths, where the first series of turning paths are adjacent to and faces the second series of turning paths so that the coating surface is completely coated [Fig. 2, abstract]. However, Kaneme fails to teach forming a coating trajectory of said turning paths *like a series of steps such that each successive one of the turning paths of the at least one sprayer unit along one edge of the specific coating area extends further in a first direction than each previous one of the turning paths along the one edge of the specific coating area; and sequentially shifting positions of a second set of turning paths, which are adjacent to and face the first set of turning paths, for reciprocation of said at least one sprayer unit*

in said one direction to avoid overlapping with said first set of turning paths in said specific coating area and coating a different coating area which is adjacent to said specific coating area while forming a coating trajectory of said *second set of turning paths like a series of steps such that each successive one of the second set of turnings turning paths along one edge of the different coating area*, adjacent to the one edge of the specific coating area, extends less in a second direction opposite to the first direction than each previous one of the second set of turning paths along the one edge of the different coating area to completely coat the object.

Ogasawara [JP 2003144990] teaches a method for coating a surface of an object comprising: dividing said coating surface into a plural number of coating areas, where each area is coated by at least one coater that reciprocates [abstract], sequentially shifting position of a first set of turning paths for reciprocation of at least one sprayer unit in one of two directions of said reciprocation and coating a specific area of said divided coating areas [of Fig. 2, i.e. T1R, T1L], while forming a coating trajectory of said turning paths like a series of steps such that each successive one of the turning paths of the at least one sprayer unit along one edge (along the boundary where the hood and windshield meet) of the specific coating area extends furthering a first direction than each previous one of the turning path along the one edge of the specific coating area [Fig. 2, T1L, due to the dimensional curve of the area]; and sequentially shifting position of a second set of turning paths for reciprocation of said at least one sprayer unit said one direction to avoid overlapping with the first set of turning paths in a specific coating area and coating a different coating area which is adjacent to said specific coating area

while forming a coating trajectory of said second set of turning paths like a series of steps such that each successive one of the second set of turning paths along one edge of the different coating area (along the boundary where the hood and windshield meet), adjacent to the one edge of the specific coating area, extends less in a second direction opposite to the first direction (wherein the first direction is angled outward from the center of the object, and the second direction angled inward of the center of the object) than each previous one of the second set of turning paths along the one edge of the different coating area [Fig. 2, T1R, due to the dimensional curve of the area]. However, *Ogasawara fails to teach the second set of turning paths is adjacent to and faces the first set of turning paths.*

Since the prior art of record neither teaches nor suggests the combination of limitations recited in the instant claims, one skilled in the art would not have been motivated to perform the claimed process.

Conclusion

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MANDY C. LOUIE whose telephone number is

(571)270-5353. The examiner can normally be reached on Monday to Friday, 7:30AM - 5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571)272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. C. L./
Examiner, Art Unit 1715

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1715